

SUPPORT FOR THE AMENDMENTS

The present amendment cancels claim 22, amends claims 10, 13, 15 and 23-26, and adds new claims 27-31. Support for these amendments is provided by the originally filed claims and specification.

Support for the amendment to claims 10, 15 and 26, and newly added claims 27-31, is found at specification page 6, lines 30-33, page 8, lines 1-7, page 13, lines 10-13 and 41-44, and page 14, lines 4-7, as well as original claims 15, 22 and 26.

Support for the amendment to claim 13 is found at specification page 1, lines 27-29, as well as original claim 13.

It is believed that these amendments have not resulted in the introduction of new matter.

REMARKS

Claims 10-21 and 23-31 are currently pending in the present application. Claim 22 has been cancelled, claims 10, 13, 15 and 23-26 have been amended, and new claims 27-31 have been added, by the present amendment.

The rejections under 35 U.S.C. § 103(a) of: (1) claims 10, 11, 14, 15 and 22-26 as being obvious over Thornber (U.S. 3,969,454) in view of Ortalano (U.S. 6,503,317) and Lee (Handbook of Composite Reinforcements); (2) claims 13 and 16-21 as being obvious over Thornber in view of Ortalano, Lee and Nakamichi (JP 55-164142); and (3) claim 12 as being obvious over Thornber in view of Ortalano, Lee and Iwata (U.S. 6,376,582), are respectfully traversed in part, and obviated by amendment in part, with respect to claims 10-21 and 23-31, which incorporates the limitations of now cancelled claim 22 into claims 10 and 26.

Amended claim 10 is directed to a process for producing a colored oriented strand board comprising: contacting wood strands which serve as a base material for at least one of three layers of the oriented strand board with a liquid colorant preparation, wherein the liquid colorant preparation comprises: (a) 10-70 wt. % of at least one pigment, (b) 0.05-7 wt. % of at least one dye, (c) 1-50 wt. % of at least one dispersant, (d) 10-88.95 wt. % of water or of a mixture of water and at least one water retainer, and (e) 0-5 wt. % of further customary constituents for colorant preparations; resinating and forming the wood strands into a three-layered mat comprising a center layer and two outside layers; and hot-pressing the three-layered mat to produce the colored oriented strand board.

Amended claim 26 is directed to an oriented strand board comprising wood strands colored with a liquid colorant preparation, wherein the liquid colorant preparation comprises: (a) 10-70 wt. % of at least one pigment, (b) 0.05-7 wt. % of at least one dye, (c) 1-50 wt. % of at least one dispersant, (d) 10-88.95 wt. % of water or of a mixture of water and at least one water retainer, and (e) 0-5 wt. % of further customary constituents for colorant preparations.

Thornber is directed to a method of making a colored particleboard comprising coloring wood flakes or wood chips with an aqueous solution consisting of water and a water soluble dyestuff (See e.g., abstract, column 1, lines 51 and 59, column 1, lines 47-54, claims 1 and 2). As acknowledged in the Official Action (See e.g., page 5, lines 17-19, page 6, lines 8-16, page 14, lines 12-14), Thornber fails to disclose or suggest contacting wood strands of an oriented strand board with a liquid colorant preparation comprising: (a) 10-70 wt. % of at least one pigment, (b) 0.05-7 wt. % of at least one dye, (c) 1-50 wt. % of at least one dispersant, (d) 10-88.95 wt. % of water or of a mixture of water and at least one water retainer, and (e) 0-5 wt. % of further customary constituents for colorant preparations, as presently claimed.

Ortalano is directed to an aqueous pigment dispersion and printing inks containing the same, wherein the pigment is dispersed in a dispersant dye in the absence of any other dispersant or additive (See e.g., abstract, column 1, lines 6-10, column 3, lines 47-61). Ortalano describes that aqueous pigment dispersions may be incorporated into pulp, paper, coatings, textiles, paints and particularly printing inks, during the manufacture thereof for the purpose of providing coloration thereto (See e.g., column 1, lines 11-15). Ortalano describes and exemplifies that aqueous pigment dispersions prepared by dispersing a pigment in a dispersant other than a dye dispersant, such as a surfactant dispersant or additive, exhibit inferior properties with respect to surface tension, dispersion stability, lightfastness, color value and optical density (See e.g., Comp. Ex. 19, column 8, lines 50-59, Comp. Ex. 29, column 10, lines 1-10, column 12, lines 58-67).

Ortalano describes that the aqueous pigment dispersion comprises 1-50 wt. %, preferably 3-25 wt. %, of the dispersant dye (See e.g., column 5, lines 8-12). Ortalano describes that the aqueous pigment dispersion comprises 1-50 wt. %, preferably 5-50 wt. %, of the pigment (See e.g., column 5, lines 54-58). Ortalano exemplifies aqueous pigment dispersions comprising 23-100 wt. % (See e.g., Examples 6 and 22), preferably 50 wt. % (See e.g., Examples 1, 4, 5, 7, 9, 11, 13, 14, 16, 17, 20, 21 and 24-28), of the dispersant dye based on a total weight of the pigment.

Lee describes that particleboards and oriented strand boards are produced by similar processes (See e.g., page 658, column 1, lines 43-43). Lee describes that there is a fundamental difference between the particle geometry of wood strands, which are narrow wood flakes having a strand length of more than 40 mm and a minimum length to width ratio of 2:1, and conventional wood flakes and chips (See e.g., page 658, column 2, lines 46-48 and 56-59, page 659, column 1, lines 1-6 and 17-18, page 663, column 2, lines 1-2). Lee describes that particle geometry is one of the most significant factors affecting physical properties of the board material and is of extreme importance in conventional processes for producing particleboard (See e.g., page 662, column 2, lines 1-4, page 665, column 2, lines 7-9, page 666, column 1, lines 11-16).

Based on the disclosure of Lee, a skilled artisan would reasonably expect that the oriented strand board of the present invention and the particleboard of Thornber have *distinctly different physical properties* attributable to the *fundamental difference in particle geometry* between the claimed wood strands and the conventional wood flakes and chips described in Thornber.

Applicants respectfully submit that a skilled artisan would not have been motivated to combine Thornber with the *clearly unrelated* reference of Ortalan, since Thornber is directed to a method of making a colored *particleboard* comprising coloring wood flakes or wood chips with an aqueous solution consisting of water and a water soluble dyestuff, whereas Ortalan is directed to an aqueous pigment dispersion and *printing inks* containing the same, wherein the pigment is dispersed in a dispersant dye in the absence of any other dispersant or additive. A skilled artisan would immediately recognize that: (1) the aqueous *dyestuff solution* of Thornber is *fundamentally different* from the aqueous *pigment dispersion* of Ortalan; and (2) the *particleboard* of Thornber is *fundamentally different* from the *pulp and paper* of Ortalan, as is the respective manufacturing processes for producing same.

Applicants further submit that even if sufficient motivation and guidance is considered to exist for a skilled artisan to combine Thornber with the clearly unrelated reference of Ortalan, a

skilled artisan would not have arrived at the process for producing the colored *oriented strand board* of the present invention comprising contacting *wood strands* of the oriented strand board with a liquid colorant preparation comprising (a) 10-70 wt. % of at least one *pigment*, (b) 0.05-7 wt. % of at least one dye, (c) 1-50 wt. % of at least one *dispersant*, (d) 10-88.95 wt. % of water or of a mixture of water and at least one water retainer, and (e) 0-5 wt. % of further customary constituents for colorant preparations, as presently claimed, *absent impermissible hindsight reconstruction*.

A reference must be considered in its entirety (i.e., as a whole), including disclosures that teach away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 USPQ 303 (Fed. Cir. 1983). Thornber teaches away from the process of the present invention since Thornber is directed to a method of making a colored *particleboard* comprising coloring *wood flakes* or *wood chips* with an aqueous solution *consisting of* water and a water soluble dyestuff. Ortalano teaches away from the process of the present invention since Ortalano is directed to an aqueous pigment dispersion, wherein the pigment is dispersed in a dispersant dye *in the absence of any other dispersant or additive*. Accordingly, a skilled artisan would not have been motivated to arrive at the claimed process for producing the colored oriented strand board of the present invention based on the explicit disclosures of Thornber and Ortalano, *absent impermissible hindsight reconstruction, thereby precluding a prima facie case of obviousness*.

Applicants respectfully submit that Ortalano also fails to provide sufficient motivation and guidance to reasonably direct a skilled artisan to particularly select the presently claimed amounts of 10-70 wt. % of at least one pigment and 0.05-7 wt. % of at least one dye from either the broadly defined amounts of 2-5,000 wt. % of dispersant dye based on a total weight of the pigment (i.e., $1/50 = 2$ wt. % of dispersant dye based on a total weight of the pigment; $50/1 = 5,000$ wt. % of dispersant dye based on a total weight of the pigment), or the preferred amounts of 6-500 wt. % of dispersant dye based on a total weight of the pigment (i.e., $3/50 = 6$ wt. % dispersant dye based on the pigment; $25/5 = 500$ wt. % dispersant dye based on the pigment), described in Ortalano.

Ortalano describes that *the pigment is dispersed in the dispersant dye, not vice versa*.

Applicants respectfully submit that such small amounts of dispersant dye relative to the total weight of the pigment, as presently claimed, would *alter the principle operation* described in Ortalano of dispersing the pigment in the dispersant dye. Accordingly, a skilled artisan *would not have had a reasonable expectation of success* in dispersing the total weight of the pigment in such small amounts of dispersant dye, as alleged in the Official Action (See e.g., page 6, lines 1-7, page 14, lines 17-21, page 15, lines 1-2).

Assuming *arguendo* that sufficient motivation and guidance is considered to have been provided by Ortalano to reasonably direct a skilled artisan to particularly select the presently claimed amounts of 10-70 wt. % of at least one pigment and 0.05-7 wt. % of at least one dye with a reasonable expectation of success, which is clearly not the case, such a case of obviousness is rebutted by a showing of superior properties.

As discussed on page 1, lines 31-34 of the present specification, conventional processes of producing colored oriented strand board result in the production of non-uniformly colored oriented strand board (See e.g., column 3, line 7, claim 1).

As discussed in the present specification and shown by the experimental data presented in Examples 2.1-2.10 therein, Applicants have discovered that *superior properties* with respect to *color uniformity/homogeneity, brilliance and lightfastness are remarkably exhibited* by colored oriented strand board produced by the process of the present invention, *even though only a small amount of 0.05-7 wt. % of at least one dye is incorporated into the claimed liquid colorant preparation*, as compared to the inferior properties exhibited by conventional processes for producing traditional non-uniformly colored oriented strand board.

Nakamichi and Iwata fail to compensate for the above-mentioned deficiencies of Thornber, Ortalano and Lee. Therefore, Thornber, Ortalano, Lee, Nakamichi and Iwata, when considered alone or in combination, fail to render obvious the presently claimed invention.

Withdrawal of these grounds of rejection is respectfully requested.

The provisional nonstatutory obviousness-type double patenting rejection of claims 10 and 22-26 as being unpatentable over claims 1, 3-6 and 11 of copending application 10/529,862 (Krusemann U.S. 2006/0048675) in view of Thornber (U.S. 3,969,454), is respectfully traversed in part, and obviated by amendment in part, with respect to claims 10-21 and 23-30, which incorporates the limitations of now cancelled claims 15 and 22 into claims 10 and 26

Krusemann is directed to a method for the coloration of a woodbase material selected from the group consisting of medium density fiberboard (MDF), high density fiberboard (HDF) and chipboard, wherein the method comprises applying a liquid colorant preparation comprising at least one pigment and 0.5-10 wt. % of at least one dye, based on a total weight of the pigment, to a wood fiber or wood chip (See e.g., abstract, [0001]-[0004], [0010], [0011], [0163]-[0168]). The fiberboard and chipboard obtained by the method of Krusemann exhibit color uniformity/homogeneity, brilliance, lightfastness and heatfastness (See e.g., [0009], [0169], Examples).

Thornber is directed to a method of making a colored particleboard comprising non-uniformly coloring wood flakes or wood chips with an aqueous solution consisting of water and a water soluble dyestuff (See e.g., abstract, column 1, lines 51 and 59, column 1, lines 47-54, claims 1 and 2).

It is improper to combine references where the references teach away from their combination. See e.g., *In re Grasselli*, 218 USPQ 769, 779 (Fed. Cir. 1983). The proposed combination cannot change the principle of operation of the primary reference or render the same inoperable for its intended purpose. See e.g., *In re Ratti*, 123 USPQ 349 (CCPA 1959).

The intended purpose of Krusemann is to provide a liquid colorant preparation that is useful for the production of uniformly colored fiberboard and chipboard. In contrast, Thornber teaches away from producing the uniformly colored fiberboard and chipboard of Krusemann, since

Thornber is directed to a method of making a non-uniformly colored particleboard. Applicants respectfully submit that the method of making a *non-uniformly* colored particleboard as described in Thornber would render Krusemann *inoperable for its intended purpose* of producing *uniformly* colored fiberboard and chipboard.

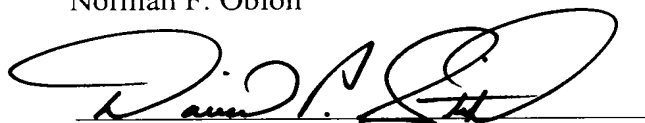
Applicants further submit that even if sufficient motivation and guidance is considered to exist for a skilled artisan to combine Krusemann with Thornber, a skilled artisan would not have arrived at the colored oriented strand board of the present invention because a skilled artisan would reasonably expect that the oriented strand board of the present invention and the fiberboard, chipboard and particleboard described in Krusemann and Thornber have *distinctly different physical properties* attributable to the *fundamental difference in particle geometry* between the claimed *wood strands* and the conventional *wood fibers, flakes and chips* described in Krusemann and Thornber, as evidenced by Lee (See e.g., page 658, column 1, lines 43-43, page 658, column 2, lines 46-48 and 56-59, page 659, column 1, lines 1-6 and 17-18, page 662, column 2, lines 1-4, page 663, column 2, lines 1-2, page 665, column 2, lines 7-9, page 666, column 1, lines 11-16).

Withdrawal of this ground of rejection is respectfully requested.

In conclusion, Applicants submit that the present application is now in condition for allowance and notification to this effect is earnestly solicited.

Respectfully submitted,

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